

Listing of the Claims

This listing of claims will replace all prior versions and listings of the claims in the application.

1. (original) A silicon carbide single crystal containing an uncompensated impurity in an atomic number density of at least $1 \times 10^{15}/\text{cm}^3$ and containing vanadium in less than a concentration of said uncompensated impurity.

2. (original) A silicon carbide single crystal as set forth in claim 1, wherein said uncompensated impurity has a concentration of not more than $1 \times 10^{17}/\text{cm}^3$.

3. (original) A silicon carbide single crystal as set forth in claim 1, wherein said uncompensated impurity has a concentration of not more than $5 \times 10^{16}/\text{cm}^3$.

4. (currently amended) A silicon carbide single crystal as set forth in ~~any one of claims 1 to 3~~ claim 1, wherein said uncompensated impurity gives a conductivity type of an n type.

5. (original) A silicon carbide single crystal as set forth in claim 1, wherein said vanadium has a concentration of at least $5 \times 10^{14}/\text{cm}^3$.

6. (original) A silicon carbide single crystal as set forth in claim 1, wherein said vanadium has a concentration of not less than $1 \times 10^{15}/\text{cm}^3$.

7. (original) A silicon carbide single crystal as set forth in claim 1, wherein said vanadium has a concentration of not less than $1 \times 10^{16}/\text{cm}^3$.

8. (currently amended) A silicon carbide single crystal as set forth in ~~any one of claims 1 to 7~~ claim 1, wherein the difference in concentration of said uncompensated impurity and said vanadium is not more than $1 \times 10^{17}/\text{cm}^3$.

9. (currently amended) A silicon carbide single crystal as set forth in ~~any one of claims 1 to 7~~ claim 1, wherein the difference in concentration of said uncompensated impurity and said vanadium is not more than $5 \times 10^{16}/\text{cm}^3$.

10. (currently amended) A silicon carbide single crystal as set forth in ~~any one of claims 1 to 7~~ claim 1, wherein the difference in concentration of said uncompensated impurity and said vanadium is not more than $1 \times 10^{16}/\text{cm}^3$.

11. (currently amended) A silicon carbide single crystal as set forth in ~~any one of claims 1 to 10~~ claim 1, wherein said silicon carbide single crystal has a main polytype of 3C, 4H, or 6H.

12. (currently amended) A silicon carbide single crystal as set forth in ~~any one of claims 1 to 10~~ claim 1, wherein said silicon carbide single crystal has a main polytype of 4H.

13. (currently amended) A silicon carbide single crystal wafer obtained by processing and polishing a silicon carbide single crystal as set forth in ~~any one of claims 1 to 12~~ claim 1, wherein said wafer has an electrical resistivity at room temperature of at least $5 \times 10^3 \Omega\text{cm}$.

14. (currently amended) A silicon carbide single crystal wafer obtained by processing and polishing a silicon carbide single crystal as set forth in ~~any one of claims 1 to 12~~ claim 1,

wherein said wafer has an electrical resistivity at room temperature of not less than 1×10^5 Ωcm .

15. (currently amended) A silicon carbide single crystal wafer as set forth in ~~claim 13~~ ~~or 14~~ claim 13, wherein said silicon carbide single crystal wafer at room temperature is a single polytype of 3C, 4H, or 6H.

16. (currently amended) A silicon carbide single crystal wafer as set forth in ~~claim 13~~ ~~or 14~~ claim 13, wherein said silicon carbide single crystal wafer is comprised of a single polytype of 4H.

17. (currently amended) A silicon carbide single crystal as set forth in ~~any one of claims 13 to 16~~ claim 13, wherein said wafer has a size of at least 50 mm.

18. (currently amended) A silicon carbide single crystal as set forth in ~~any one of claims 13 to 16~~ claim 13, wherein said wafer has a size of at least 100 mm.

19. (currently amended) An epitaxial wafer comprised of a silicon carbide single crystal as set forth in ~~any one of claims 13 to 18~~ claim 13 on the surface of which a silicon carbide thin film is grown.

20. (currently amended) An epitaxial wafer comprised of a silicon carbide single crystal as set forth in ~~any one of claims 13 to 18~~ claim 13 on the surface of which a ~~potassium~~ gallium nitride, aluminum nitride, or indium nitride thin film or mixed crystal thin film of the same is grown.

21. (original) A method of production of a silicon carbide single crystal by using a sublimation recrystallization method using a seed crystal to grown a single crystal, said method of production of a silicon carbide single crystal characterized by using a sublimating material comprised of silicon carbide and vanadium or a vanadium compound in a mixture and using for the crystal growth a graphite crucible having a nitrogen concentration of not more than 50 ppm as measured by an inert gas fusion thermal conductivity method.

22. (original) A method of production of a silicon carbide single crystal as set forth in claim 21, wherein said graphite crucible has a nitrogen concentration of not more than 20 ppm.

23. (original) A method of production of a silicon carbide single crystal as set forth in claim 21, wherein said graphite crucible has a nitrogen concentration of not more than 10 ppm.

24. (currently amended) A method of production of a silicon carbide single crystal as set forth in ~~any one of claims 21 to 23~~ claim 21, wherein said graphite crucible is a graphite crucible treated for purification by being held in an inert gas atmosphere of a pressure of not more than 1.3 Pa at a temperature of 1400°C or more for 10 hours to less than 120 hours.

25. (currently amended) A method of production of a silicon carbide single crystal as set forth in ~~any one of claims 21 to 23~~ claim 21, further comprising charging the graphite crucible with a material powder mainly comprised of silicon carbide and, in that state, treating the graphite crucible for purification by holding it in an inert gas atmosphere at a pressure of not more than 1.3 Pa at a temperature of 1400 to 1800°C for 10 hours to less than 120 hours, placing said graphite crucible and seed crystal in an inert gas atmosphere adjusted

in pressure to 1.3×10^2 to 1.3×10^4 Pa, and heating to 2000°C or more, then starting crystal growth.

26. (currently amended) A method of production of a silicon carbide single crystal as set forth in ~~claim 24 or 25~~ claim 24, wherein said purification treatment is performed at a pressure of 1.3×10^{-1} Pa or less.

27. (currently amended) A method of production of a silicon carbide single crystal as set forth in ~~claim 24 or 25~~ claim 24, wherein said purification treatment is performed at a pressure of 6.5×10^{-2} Pa or less.

28. (currently amended) A method of production of a silicon carbide single crystal as set forth in ~~any one of claims 24 to 27~~ claim 24, wherein after said purification treatment, said graphite crucible is used for crystal growth without being exposed to the atmosphere.